

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 1 416 319 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
14.07.2004 Bulletin 2004/29

(51) Int Cl. 7: G03B 21/62

(43) Date of publication A2:
06.05.2004 Bulletin 2004/19

(21) Application number: 03028583.7

(22) Date of filing: 27.02.1998

(84) Designated Contracting States:
DE FR GB NL

(30) Priority: 28.02.1997 JP 4563397

(62) Document number(s) of the earlier application(s) in
accordance with Art. 76 EPC:
98103483.8 / 0 862 081

(71) Applicant: Kuraray Co., Ltd.
Kurashiki-shi, Okayama-ken (JP)

(72) Inventors:

- Funazaki, Kazuo, c/o Kuraray Co., Ltd.
Kitakanbara-gun, Niigata (JP)
- Matsuzaki, Ichiro, c/o Kuraray Co., Ltd.
Chuo-ku, Tokyo (JP)

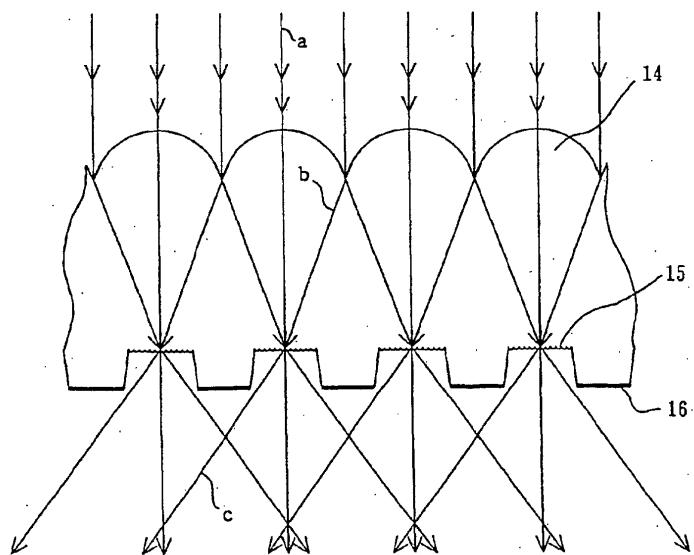
(74) Representative: VOSSIUS & PARTNER
Siebertstrasse 4
81675 München (DE)

(54) Rear projection image display apparatus

(57) The present invention relates to a rear projection image display apparatus comprising a screen comprising a lenticular lens sheet including a light incidence surface with lenticular lenses periodically provided thereon, a light exit surface including a plurality of flat surfaces and a plurality of light absorption portions, wherein each flat surface is located at or near a predetermined distance from a respective lenticular lens which corresponds to a focal position of the respective lenticular

lens, each light absorption portion is located at a distance from the lenticular lens sheet which corresponds to a non-focal position, and the plurality of flat surfaces and the plurality of light absorption portions are alternately provided along the light exit surface, micro-lenticular lenses including a periodical structure, and provided on each flat surface in the same direction as that of the lenticular lens sheet on the light incidence surface, and a projector device having a periodical pixel structure configured to project an image onto said screen.

Fig. 5





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 03 02 8583

DOCUMENTS CONSIDERED TO BE RELEVANT									
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)						
X	US 5 066 099 A (YOSHIDA TAKAHOKO ET AL) 19 November 1991 (1991-11-19) * column 6, line 56 – column 9, line 57; figures 3-6 *	1	G03B21/62						
Y	-----	2							
Y	US 5 400 114 A (YOSHIDA TAKAHIKO ET AL) 21 March 1995 (1995-03-21) * column 2, line 24 – column 3, line 36; figures 3,31 *	2							
A	EP 0 740 192 A (KURARAY CO) 30 October 1996 (1996-10-30) * the whole document *	1,2							

			TECHNICAL FIELDS SEARCHED (Int.Cl.7)						
			G03B H04N						
<p>The present search report has been drawn up for all claims</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Place of search</td> <td style="width: 33%;">Date of completion of the search</td> <td style="width: 34%;">Examiner</td> </tr> <tr> <td>The Hague</td> <td>25 May 2004</td> <td>Boeykens, J</td> </tr> </table>				Place of search	Date of completion of the search	Examiner	The Hague	25 May 2004	Boeykens, J
Place of search	Date of completion of the search	Examiner							
The Hague	25 May 2004	Boeykens, J							
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document							
EPO FORM 1503.03.82 (P04C01)									

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 03 02 8583

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on. The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

25-05-2004

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 5066099	A	19-11-1991	JP	2972271 B2	08-11-1999
			JP	3039944 A	20-02-1991
			JP	3070586 B2	31-07-2000
			JP	11194425 A	21-07-1999
			JP	3147103 B2	19-03-2001
			JP	11223879 A	17-08-1999
			JP	3147122 B2	19-03-2001
			JP	2000305182 A	02-11-2000
US 5400114	A	21-03-1995	JP	3043485 B2	22-05-2000
			JP	5066479 A	19-03-1993
			US	5513037 A	30-04-1996
			KR	9615507 B1	14-11-1996
			US	5485308 A	16-01-1996
			JP	3269175 B2	25-03-2002
			JP	7005573 A	10-01-1995
			JP	3356174 B2	09-12-2002
			JP	2002169228 A	14-06-2002
EP 0740192	A	30-10-1996	EP	0740192 A2	30-10-1996
			JP	3474358 B2	08-12-2003
			JP	9015731 A	17-01-1997
			US	5959701 A	28-09-1999